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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Ghisolif, G.	Docket No. MG029A_US Art Unit: 1772
For: Recyclable Mutlilayer Material in Polyester Resin	Examiner: Marc A. Patterson
Serial No. 09/334,891	I hereby certify that this correspondence is being facsimile transmitted to the United States Patent and Trademark Office to Fax Number 703-872-9306 on June 27, 2005
Filed: 6/17/1999	Edwin A. Sisson Edwin A. Sisson, Registration No. 48,723

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION OF DR. KEVIN L. ROLLICK

I, Kevin L. Rollick, PhD, hereby declare that:

1. I am a resident of Monroe Falls, Ohio and am employed as a Senior Research Scientist at M&G Polymers, USA. I am not an inventor of the subject matter disclosed or claimed in the subject patent application.

2. My educational background includes a Bachelor of Science from Indiana University of Pennsylvania (cum laude, 1975); and a PhD in Organic Chemistry and minor in Inorganic Chemistry from Indiana University at Bloomington, Indiana (cum laude, 1981).

3. I am a named inventor in 13 United States letters patents, six of which relate to the field of polyester polymers. Four of the six patents relate to the foaming of polyester to produce heat resistant crystallized polyester trays.

4. I have been employed by M&G Polymers USA, LLC, and its predecessors (The Goodyear Tire & Rubber Company and Shell Oil Company) for approximately 23 years and

have worked in the field of polymer resins for twelve years. I am presently a Senior Research Chemist at M & G Polymers USA, LLC's research facility located in Sharon Center, Ohio.

5. I have authored or co-authored seven technical papers, one of which was awarded the Best Paper Award.

6. For five years, I was a member of the foamed crystallized polyester tray research group. Our research centered on foaming polyester and subsequently making crystallized trays for high temperature applications.

7. For two years I supervised the analytical labs and conducted or oversaw many crystallinity determinations of polyester, polyethylene naphthalate, and foamed materials. These determinations used the same principles described in Kimura et al. (United States Patent 5,972,445) I am therefore very familiar with the density/crystallinity relationship, the crystalline and amorphous densities and crystallinity levels described in Kimura et al. at column 4, lines 23 – 41.

8. It has been my experience that lack of transparency is an inherent property of extrusion foamed polyester sheet. I have never seen acceptable transparent extrusion foamed sheet. In the instance where the foaming line is not operating properly it is possible to foam sheet with relatively few but very large bubbles which is transparent or translucent. Articles from such sheet would have very poor performance making this an undesirable condition. At 700 kg/m3, a properly foamed sheet will not be transparent.

9. In foaming polyesters, there are two types of densities, the density of the polymer which can be determined by measuring the crystallinity of the polymer and the density of the sheet. The lowest polymer density attainable is the amorphous density which corresponds to 0% crystallinity. The amorphous density for polyethylene terephthalate and polyethylene naphthalate is 1335 Kg/m3 and 1360 Kg/m3; respectively.

10. The polymer density increases with increasing crystallinity and therefore any variations in crystallinity from 0% will yield polymer densities greater than the amorphous density.

11. Because the polymer density can never be below the amorphous density, the only way to achieve a density of <700 Kg/m3 is to place a lighter material into the polymer such as

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foam (e.g. disperse gas bubbles into the polymer). Foaming the polymer significantly lowers the density of the sheet and slightly increases the density (crystallinity) of the polymer. The foaming process imparts orientation to the polymer chains and retards heat transfer from the polymer thereby inhibiting the quenching process. Therefore PET foams generally show some low level of crystallinity as produced and the polymer itself will have a density greater than that of strictly amorphous PET. Once the polymer is foamed it is not transparent.

12. I have read the rejection and I know of no way to vary the density and crystallinity of polyester so that the polymer density is less than or equal to 700 kg/m3.

13. I declare that all statements made herein of my knowledge are true and that all statements made on information and belief are believed to be true and, further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the U.S. Code and that such willful false statements may jeopardize the validity of this application and any patent issuing thereon.

Respectfully submitted,

Kevin L. Rollick Ph. D

June 27, 2005

Kevin L. Rollick, PhD

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